

filed
3-5-04
L. S. Hall

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW MEXICO

PAUL RATION, NELLIE RATION,
PRISCILLA RATION, and ETHELEEN MOSES,
individually and as parent and next friend of
TYRELL MOSES and SHANIA MOSES,

Plaintiffs,

vs.

No. CV-03-110 BB/ACT

STALLION TRANSPORTATION, INC.,
and ADAMCZYK LUCJAN,

Defendants.

**DEFENDANTS' REQUESTED SPECIFIC FINDINGS AND
CONCLUSIONS REGARDING PLAINTIFFS' MOTION TO
EXCLUDE TESTIMONY OF WENDELL C. HULL, Ph.D.**

Defendants request the Court adopt the following requested findings of fact and conclusions of law and that the Court deny Plaintiffs' motion to exclude testimony of Wendell C. Hull, Ph.D.:

Specific Findings

Regarding Expert Qualifications:

1. Wendell C. Hull obtained a Bachelor of Science degree in Mechanical Engineering from the University of Toledo in 1970; a Master of Science degree in Mechanical Engineering from the University of Toledo in 1971; and a Ph.D. in Engineering Science from the University of Toledo in 1975.
2. From 1964 to 1970, he was a Project Engineer for American Chain and Cable Company, doing research and development and managing special research projects, including developing new products and production machinery.

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3. From 1970 to 1974, Dr. Hull participated in extensive research as a research assistant at the University of Toldeo and taught machine design.

4. From 1974 until 1978, he was an assistant professor and then became an associate professor from 1978 until 1982, and 1983 to 1984 at New Mexico State University. He served as a forensic and engineering consultant and was a member of the mechanical engineering department. Among the graduate courses he taught was the Theory of Elasticity and the Theory of Plasticity.

5. From 1975 to the present, Dr. Hull has been a forensic consultant and accident reconstructionist.

6. Dr. Hull's continuing education has included Traffic Accident Reconstruction I and II from Northwestern University in 1985 and 1988, respectively; Society of Automotive Engineers (SAE) Accident Reconstruction Committee (with peer-reviewed publication): 1992, 1993, 1996. In 1990, he attended the Society of Accident Reconstructionist's program on vehicle crash tests. He also attended the Southwestern Association of Technical Accident Investigators, Inc. programs on vehicle crash tests on 14 annual occasions. All of these programs dealt with accident reconstruction, including analysis of light bulb filaments and their response to motor vehicle collisions.

7. Dr. Hull has served as a technical paper reviewer, Federal Highway Administration, Transportation Research Board, in the area of heavy truck dynamics.

8. Dr. Hull is a member of various professional and honor societies in the area of accident reconstruction, including the Society of Automotive Engineers – Accident Reconstruction Practices Task Group.

9. Dr. Hull has over 30 publications and presentations that he has prepared, either individually or with others. Several of these publications and presentations deal with such things as machine design fundamentals, failure analysis, and accident reconstruction. The Society of Automotive Engineers published four of the publications in the area of accident reconstruction. One SAE article dealt with estimating crush stiffness of when reconstructing vehicle accidents.

10. Dr. Hull has qualified as an expert and testified in numerous court cases involving accident reconstruction matters throughout the state of New Mexico and in United States District Courts in New Mexico, Oklahoma, and Virginia. Additionally, Dr. Hull has qualified and testified as an expert in trials in Ohio, California, Texas, Oklahoma, Massachusetts, and Illinois.

11. Since 1975, Dr. Hull has conducted several hundred accident reconstructions.

12. Since 1975, Dr. Hull has conducted several dozen accident reconstructions involving the analysis of light bulb filaments and their response to motor vehicle collisions.

13. Prior to the motor vehicle accident that is the subject of this lawsuit, on September 9, 2002, Dr. Hull has conducted experiments and testing of the response of the light bulb filaments to motor vehicle accidents.

14. Dr. Hull's education, training, experience, publications, and presentations are set out in his curriculum vitae (Defendants' Exhibit Y).

Regarding Accident Reconstruction:

15. Pursuant to the request of counsel for Defendants, Dr. Hull conducted an investigation of the accident involving the Ration and Stallion vehicles that occurred on September 9, 2002. Dr. Hull's investigation included review of the Laguna Police Accident Report, DOT Driver and Inspection Report, reports of Nelson Welch, Donald Asa, and Douglas McLeod, depositions of Nelson Welch, Donald Asa, Paul Ration, Charles Reynolds, Shaye Hungate Trujillo, and photographs taken by Nelson Welch and Douglas McLeod.

16. As part of the investigation, Dr. Hull inspected, analyzed, and recorded in photographs (Defendants' Exhibit Z-8) and video (Defendants' Exhibit Z-10) the electrical wiring and light bulb evidence removed from the Ration vehicle by Mr. Ration and Nelson Welch at the scene of the accident.

17. Based on Dr. Hull's education, training, experience, investigation, and analysis, Dr. Hull determined that the electrical wiring and lighting system on the Ration vehicle was in a deteriorated condition in which it had experienced wire insulation breakdown from abrasion, separation, poor quality electrical splicing, and temporary electrical taping of connections and wire ends.

18. Dr. Hull performed a reconstruction analysis for which he prepared a report on October 7, 2003 (Defendants' Exhibit Z). Dr. Hull also prepared diagrams depicting the movement and impact of the vehicles (Defendants' Exhibit Z-9.1 and 9.2).

19. Based upon Dr. Hull's education, training, experience, review of materials, and analysis, Dr. Hull concluded that this accident involved three impacts of the vehicles as shown in Defendants' Exhibits Z-9.1 and 9.2.

20. Dr. Hull performed a speed analysis for which his computations are set forth in Defendants' Exhibit Z-5. Based on his education, training, experience, and analysis, Dr. Hull concluded that the Ration vehicle, just prior to impact, was going approximately 40 miles per hour and that the Adamczyk vehicle was going approximately 65 miles per hour.

21. Based upon his review of the depositions, photographs, and his inspection of the electrical wiring and light bulb evidence, Dr. Hull determined that after the accident, the conditions and evidence of the electrical connection for trailer lighting at the rear of the Ration pickup, where Mr. Ration had spliced in a connector different from that which came with the pickup, had been altered, and/or changed, by Mr. Ration pulling the connector off and taking it with him.

22. Dr. Hull's inspection of the left rear taillight from the trailer revealed that a bulb filament was deformed and that the deformation of the filament was toward the back of the bulb envelope or casing.

23. Based upon his education, training, experience, investigation, and analysis, Dr. Hull reached the opinion that the deformation observed was consistent with the second collision between the Adamczyk truck and Ration trailer and not the first collision of these two vehicles. He further determined that the first collision would have resulted in filament stretch in the opposite direction. This evidence is consistent with the lights on the Ration trailer being off prior to the first collision but subsequently coming on as a result of electrical wiring movement from the first collision prior to the second collision thereby heating the bulb filament sufficient to result in its deformation during the second collision.

24. Based on his education, training, experience, testing, investigation and analysis, Dr. Hull determined that the rubber-like gasket holding the light bulb fixture in place and the soft flexible mounting of the light bulb in the light fixture of the left rear taillight of the Ration trailer was flexible, and thus different in nature from the relatively rigid solid mounting of light bulbs and light bulb fixtures in standard automotive and truck mountings, and likewise different than the light bulb fixtures and mountings described and tested in the literature involving the response of light bulb filaments to motor vehicle collisions.

25. One paper from the Society of Automotive Engineers, entitled "Accident Information for Traffic Accident Reconstruction -- The Role of the Automobile Lamp Filament," does state, "and possibly the direction of impact force can be obtained by careful study of the lamp filament."

Regarding Testing:

26. In order to test the opinion that he reached, Dr. Hull undertook testing in his test facilities.

27. Dr. Hull obtained a large number of light bulbs and light fixtures of similar make and model as on the Ration trailer. These light bulbs and fixtures were not previously tested in any of the tests described in other publications.

28. Dr. Hull designed and developed a test fixture, which involved a pendulum arrangement of an approximately 13-foot length with a steel fixture that had a round opening such as the type on the trailer that would accommodate the rubber retaining boot for the light fixture. Pendulum-type testing fixtures were used in some of the tests described in the published literature.

29. Light fixtures were placed in the test bracket and the pendulum was elevated to a distance of approximately 12 feet, causing impact speeds of approximately 20 miles per hour. This caused an impact with the light fixture that would be directed opposite the pendulum fixture movement.

30. The approximate impact speed on 23 tests of similar lighting fixtures to those in the Ration vehicle ranged from 13.9 to 19.5 miles per hour. Dr. Hull determined that for purposes of testing and analysis, these speeds were consistent with speeds used in testing described in the literature. Dr. Hull further determined that these speeds were consistent with the test speeds and the speeds in the Ration accident and were sufficiently similar for purposes of determining whether direction of deformation of filaments correlates to direction of force of collision.

31. The test setup and condition of the bulbs is documented in Defendants' Exhibits Z-4 and Z-7. The testing is documented in videotapes (Defendants' Exhibits Z-11 and Z-12) and is further documented in videotapes of high-speed photography (Defendants' Exhibit Z-13).

32. The testing was performed with different fixture mounting types, different drop heights, different bulb holding bracket types, and at different speeds. The results of the testing are set forth in Defendants' Exhibit Z-1.

33. The results of the testing as reflected in Defendants' Exhibit Z-1 are consistent with the opinion rendered by Dr. Hull that the light bulb was illuminated on the second collision of the vehicles, based upon the direction of impact and the direction of the deformation of the filament.

Conclusions of Law

1. Dr. Hull is qualified to testify as an expert in accident reconstruction and the analysis of light bulb filaments involved in motor vehicle accidents.
2. Dr. Hull's expert testimony on the subjects of accident reconstruction and the analysis of the light bulb filaments is based upon sufficient facts and data.
3. The opinion of Dr. Hull regarding his accident reconstruction and analysis of the light bulb filaments is the product of reliable scientific and engineering principles and methods.
4. Dr. Hull applied the principles and methods reliably to the facts of this case.
5. The motion to exclude Dr. Hull's testimony is denied, and Dr. Hull shall be permitted to testify regarding his accident reconstruction and analysis of the light bulb filaments.

GALLAGHER, CASADOS & MANN, P.C.

By 

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Certificate of Service

I hereby certify that on March 5, 2004, I hand-delivered a copy of the foregoing to
Plaintiffs' counsel, Daniel Rosenfelt.

A handwritten signature in black ink, appearing to read "Nathan H. Mann", is written over a horizontal line.

Nathan H. Mann